

**SECTION 01720**  
**PROJECT RECORD DOCUMENTS**

**PART 1 GENERAL**

**1.01 DESCRIPTION**

- A. Scope of Work: The Contractor is responsible for maintaining one record copy of:
  - 1. Record Drawings
  - 2. Record Specifications.
  - 3. Addenda.
  - 4. Change Orders and other modification of the Contract.
  - 5. Engineer's written orders or instructions.
  - 6. Approved Shop Drawings, Product Data and Samples.
  - 7. Field Test records.
  - 8. Construction photographs.
  - 9. As-built dimensions and elevations as recorded by the Contractor's Florida Registered Land Surveyor.
- B. The records listed above are to be made available for the M-D WASD's review at all times for all projects.
- C. Related Requirements Described Elsewhere:
  - 1. Section 1031: Grades, Lines and Levels
  - 2. Section 01340: Shop Drawings, Product Data and Samples

**1.02 MAINTENANCE OF DOCUMENTS AND SAMPLES**

- A. Maintain documents in a clean dry, legible, condition and in good order. Do not use record documents for construction purposes.

**1.03 RECORDS**

- A. During the life of the Contract the Contractor shall retain the services of a Florida Registered Land Surveyor who shall maintain records of the installation, including all deviations from Plans and Specifications.
- B. Measure and Record all information for all projects concurrently with construction progress.
- C. Submit redlines, partially completed as-built plan sheets and fully complete as-built Plan sheets, all as required by and satisfactory to, the M-D WASD on a monthly basis or such lesser interval as directed by the M-D WASD.

- D. Label each document "PROJECT RECORD" in neat large printed letters.
1. Do not conceal any work until as-built information is recorded by the Contractor's surveyor and, if so required, by the M-D WASD surveyor.
  2. All locations for future connections or tie-ins shall be left unburied and uncovered until the Contractor's Florida Registered Land Surveyor measures and records the as-built information.
    - a. All as-built and inspector information is to be made available to the Engineer on a daily basis for inclusion in the M-D WASD records.
  3. Restrained pipe, end line valves, thrust blocks shall be left uncovered for the last complete length. In line valves and tees shall be left exposed for one length on both sides plus the face end. Measure and record the elevation, horizontal and vertical alignment, and inclination for these items.
  4. For all projects, the Contractor's Florida Registered Land Surveyor (FRLS) shall maintain exact and extensive records of any deviations from the Plans or Specifications. These records shall be satisfactory to the Engineer, who's decision shall be final, and sufficient to allow the production of accurate as-built Plans which correctly and completely portray the work as constructed.
  5. For all projects, the Contractor's Florida Registered Land Surveyor shall record data as follows during the entirety of construction.
    - a. For facility (eg a water or sewage plant, pumping station, or similar site if so designated by M-D WASD) projects, record as-built dimensions and elevations every twenty-five feet or portion thereof along the pipeline and at every abrupt change in direction of the new line.
    - b. For pipeline projects, constructed in the public right-of-way dimensions and elevations every one hundred feet or portion thereof along the pipeline and at every horizontal and vertical change in direction.
    - c. In all cases record locations and elevations for each valve, fitting, service line, fire hydrant, water sampling point, utility poles adjacent to the proposed line, overhead wires crossing the ditch line (approximate height above grade) and other appurtenances along the pipeline.
    - d. The identity, dimensions, location and elevation of any existing utility crossing the proposed line and so immediately adjacent to the new line as to be exposed by the excavation shall also be recorded. Locate, excavate expose and record the same data for any utility shown in the plans whose proximity to the proposed pipeline could affect the certification requirements of the new installation. Note that in instances of a very wide ditch due to ground conditions the recording of data for adjacent, paralleling, utilities shall only be required for lines which come within three

- feet of the outside of the pipe being installed unless otherwise ordered by the M-D WASD who's decision shall be final.
- e. Without exception, for all thrust blocks, the top elevation, outer dimensions, thickness of the block, length and location of any sheet piling, if used, shall be recorded by the Contractor's FRLS.
  - f. Specific locations and elevation of equipment, the buildings and miscellaneous items installed inside them shall be recorded as applicable and as required by the M-D WASD.
  - g. Without exception, where the substitution of another piece of equipment for that shown on the Plans has been allowed, the footprint, clearance and elevation dimensions shall be recorded by the Contractor's FRLS and these changes shall be accurately and thoroughly portrayed on the as-built plans.
  - h. The Contractor's Licensed Surveyor shall prepare from the field data, as-built record drawings showing correctly, completely and accurately the installation, embracing all changes and deviations made during construction, including all construction variances, to reflect the work as it was constructed.
  - i. Record Drawings shall be prepared as specified hereinafter.
  - j. If the M-D WASD determines that the Drawings are not acceptable, they will be returned to the Contractor with a cover letter noting the deficiencies and/or reasons for the disapproval. Contractor shall have ten calendar days to correct all exceptions taken by the M-D WASD and resubmit as-built record drawings to the M-D WASD for final acceptance.

#### 1.04 DRAWINGS

- A. During the life of the Contract, maintain records of all deviations from the Plans and Specifications and prepare therefrom As-Built Record Drawings showing correctly and accurately all changes and deviations made during construction to reflect the work as it was actually constructed. It is the responsibility of the Contractor to check the As-Built Record Drawings for errors and omissions prior to submittal to the MD-WASD and certify in writing that the As-Built Record Drawings are correct and accurate, including the actual location of all piping including building exposed and internal piping, electrical/signal conduits in or below the concrete floor, Indicate the size, depth and voltage in each conduit.
- B. Legibly Mark to Record Actual Construction: All data as previously specified for all installations by the Contractor's FRLS. For on-site structures and facilities work the Contractor's Florida Registered Land Surveyor shall record:
  - 1. Depths of various elements of foundation in relation to finish first floor and datum plane.
  - 2. All exposed and underground piping and ductwork with elevations and dimensions and locations of valves, pull boxes, etc. Changes in location. Horizontal and vertical locations of underground utilities and appurtenances, measured from permanent reference points, plant survey

3. grids, property lines and similar.
  4. Location of internal utilities and appurtenances concealed in the construction shall be referenced to visible and accessible features of the structure. Air conditioning ducts with locations of dampers, access doors, fans and other items needing periodic maintenance.
  5. Field changes in dimensions, locations and details.
  6. Changes made by Engineer's written instructions or by Change Order.
  7. Details not on original Plans.
  8. Equipment and piping relocations.
  9. Major architectural and structural changes in structures, including tanks.
  10. Architectural schedule changes according to Contractor's record and shop drawings.
  11. Record drawings shall be prepared as specified hereinafter.
- C. Specifications and Addenda: Legibly mark each section to record the following:
1. Manufacturer, trade name, catalog number and supplier of each product and item of equipment actually installed.
  2. Changes made by Engineer's written instructions or by Change Order.
- D. Approved Shop Drawings: Provide record copies for system diagrams and drawings together with each element of process equipment, piping, electrical system and instrumentation system.

## 1.05 SUBMITTALS

- A. Accompany submittal with transmittal letter in duplicate, containing:
1. Date.
  2. Project title and number.
  3. Contractor's name and address and phone number.
  4. Title and number of each Record Document.
  5. Signature of Contractor or his authorized representative.
- B. Record Drawings with five blue line copies which have been signed and sealed by the surveyor shall be submitted to the M-D WASD for the Engineer's review. Drawings shall conform to recognized standards of drafting and the minimum technical standards as set forth by the Board of Professional Surveyors and Mappers, shall be neat, legible and on 24-inch by 36-inch mylar. These materials shall be submitted to the M-D WASD for the Engineer's review as a prerequisite for payment during the course of construction as previously specified and final, complete sets of documents within ten calendar days following the completion date of successful testing of all mains, equipment and appurtenances under this Contract. Final acceptance will not be made until the set of as-built record drawings and five sets of blue-line prints have been approved and accepted by the M-D WASD.

1. In cases where a portion of a pipeline system or parts of a process system are put into service, the above conditions shall apply for the in-service portion and acceptance of work constructed shall be withheld until the as-built drawings are accepted by the M-D WASD.
2. As-Built Record Drawings, as prepared by the Contractor's Florida Registered Land Surveyor and submitted by the Contractor, shall comply with following criteria and standards:
  - a. Title block must show the Contract or Project Title (as applicable); Contract number; M-D WASD ER number; Contractor's name; Engineer of Record's name; Surveyor's name and address; date; location; and where appropriate to the work, size and type (ie water main, sanitary gravity main, sanitary force main) of main.
  - b. Baselines or centerlines must be tied to section corners, monument line and right-of-way lines.
  - c. Pipeline must be tied to baseline or centerline with stations and offsets.
  - d. Baselines or centerlines must show bearings or deflection angles, or delta, radius, chord and arc length for curves.
  - e. Show all horizontal curve data, including point of curvature (PC) and point of tangency (PT) stations or radial bearing.
  - f. Stationing must be the same as shown on construction drawings and must be tied to Section corners, centerline intersections and all other pertinent control points within the Project. All such pertinent points shall have their stationing shown and where there is dual stationing for a point, both stations shall be called out.
  - g. Identify all streets by name or number and show stationing at all intersecting streets.
  - h. Refer to vertical datum plane and and identify the location, elevation and source supplying the bench mark used.
  - i. Tie easement lines to survey baseline or platted centerline and right-of-ways.
  - j. Show horizontal and vertical locations of all fittings, deflections, or at any significant change of direction, and at a maximum of 100-foot intervals along the pipeline for off-site (eg in the public right-of-way) and at maximum 25-foot intervals for on-site (eg on a facility such as a pump station or plant) work.
  - k. On all pipe fittings of 36-inch diameter or over, ( ie tees, bends, crosses, wyes, increasers/decreasers, bevels) elevations must be taken at the end and center points to reflect the true elevation and attitude of the fitting.
  - l. Elevations of natural ground or pavement over the pipeline must be shown at each position where the pipe elevation is shown and at intervening high and low points.
  - m. Manhole rim and valve box rim elevations must be shown.
  - n. Show all invert and bottom elevations in manholes and valve vaults or boxes. Show all invert and bottom elevations together

- with pipe size, and where it can be determined, pipe material, for existing structures having pipes which cross the pipeline being constructed.
- o. Locations and elevations together with diameter, thickness and material of all casings.
  - p. Location, top and bottom elevations of all sheeting left in place.
  - q. Coordinate values used inside plants shall be the local ,M-D WASD established coordinate systems referenced to the property boundary.
  - r. State plane coordinate values for all new valves and manholes; on existing valves and manholes at points of connection or closest to the point of connection and the point of connection itself.
3. Certification: The Contractor shall certify on as-built record drawings all other actual constructed details and information as may be required by the M-D WASD including but not limited to:
- a. Valves must be identified by size, type, end condition; and on valves 16-inch or larger, the manufacturer's name and number of turns required to open or close the valve.
  - b. Show calculated pipeline percent of grade between manholes of gravity systems.
  - c. Types and sizes of sheeting and piling together with measured and complete; location, dimensional and elevation data on any pile caps, tie backs, anchors, whalers or other appurtenant structures left in place.
- C. Drawings on Magnetic Media: The M-D WASD reserves the right to require submittal of as-built drawings in AutoCAD for Windows Release 14 format or later. Graphical information contained on magnetic media shall be the same as provided on plan sheets. Magnetic media shall be delivered to the office of the Chief, Engineering Division, at 3575 S. LeJeune Road, Miami, Florida 33146 or by mail at P. O. Box 330316, Miami, Florida 33233-0316. A letter of transmittal shall be provided, containing a list of all files and data being provided.

## **PART 2 PRODUCTS**

Not Used

## **PART 3 EXECUTION**

Not Used

**END OF SECTION**